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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,803	10/29/2003	Shunpei Yamazaki	0756-7214	6055

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EXAMINER	
DANG, TRUNG Q	

ART UNIT	PAPER NUMBER
2823	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,803	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	Trung Dang	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 6-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Takayama et al. (US 2003/0032210 of record).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

With reference to Figs. 4A-4C and Figs. 5A-5C, the prior art teaches the claimed invention in that it discloses a method of manufacturing a semiconductor device, comprising:

forming, over a substrate **40**, a metal layer **41**, an oxide layer **42** in contact with

the metal layer, and a layer **43** to be peeled including a semiconductor element over the oxide layer (Fig. 4A and Embodiment 3 in conjunction with Embodiment 1);

bonding a support to the layer to be peeled (paras. [0141], [0144], [0170] and claims 13, 17);

irradiating the metal layer **41** with a laser beam (para. [0167]-[0168]);

peeling the layer **43** to be peeled that is bonded to the support from the substrate with a physical means at an interface between the oxide layer **42** and the metal layer **41** (Fig. 4B and para. [0169]-[0170]).

Note that, although the reference is silent about the oxidation of the metal layer **41** to form a metal oxide layer between the metal layer **41** and the oxide layer **42**, such is inherently occurred because of the following reasons: a) the material of metal layer **41** and that of disclosed in the pending application are identical, and b) the type of laser beam used are also identical, hence the result produced by two identical processes must be the same. Despite the above inherency, it is known that when the oxide layer **42** is formed on the metal layer **41**, the surface of the metal layer is oxidized (see para. [0015] in US 2004/0087110 that is cited merely for the purpose of showing this fact), thus a metal oxide is inherently present at the interface between the metal layer **41** and the oxide layer **42.** Furthermore, claim 17 of the reference indicates that the oxidizing step, which is inherently resulted by the laser irradiation, is performed after bonding the support substrate to the layer 43 to be peeled.

For claim 7, see para. [0154] for the limitation regarding an insulator layer is provided between the substrate **40** and the metal layer **41.**

For claims 11-26, see paragraphs [0139], [0144] for the materials of the metal layer 41, the substrate, and the support substrate.

For claims 27-31, the Embodiment 4 illustrated in Figs. 5A-5C teaches every limitation of the claims, wherein the zinc oxide (ZnO) **52a** reads on the claimed metal oxide. That is, the ZnO **52a** is formed between metal layer **51** and oxide layer **52b** (see Fig. 5A).

For claim 34, see para. [0167] for the type of laser.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. The record does not have a terminal disclaimer hence the double patenting rejection is maintained as of record.

Claims 6-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of copending Application No. 10/193,912 (Takayama et al. reference noted above) in view of Shimoda et al. (US 6,372,608 cited by applicants).

This is a provisional obviousness-type double patenting rejection.

Claim 17 of the US' 912 when read into its base claim 13 comprises a step of irradiating a laser beam onto a laminated structure comprising a metal layer over a substrate, an oxide layer in contact with the metal layer, a peeled off layer on the oxide layer, and a support layer adhered (i.e. bonded) to the peel off layer. Claim 17 differs from the pending claims 6, 7, 8, and 27 in the presence of a metal oxide layer between the metal layer and the oxide layer. However, the metal oxide layer is inherently formed at the interface between the metal layer and the oxide layer when the laminated structure is irradiated with a laser beam or when the oxide layer is formed on the metal layer for the same reasons noted in the above 102 rejection. Furthermore, with respect to the claimed limitation regarding the oxidizing step that is performed after bonding the support to the layer to be peeled, claim 17 of the US'912 indicates that the oxidizing step, which is inherently resulted by the laser irradiation, is performed after bonding the support substrate to the layer 43 to be peeled.

For pending claims regarding the materials of the metal layer, claim 15 of the US'912 recites metal elements as claimed. Thus, the selection of such metal elements

for the metal layer of claim 13 would have been obvious to one of ordinary skill in the art because the use of known materials for the same purpose would have been within the level of one skill in the art.

For pending claims regarding the materials of the substrate and the support layer, Shimoda teaches a peeling method in which a substrate is made of glass or quartz (col. 11, lines 17-25) and a support layer 6 (Fig. 4) is made of plastic or plastic base materials (col. 15, lines 17-15). It would have been obvious to one of ordinary skill in the art to select the materials for the substrate and the support layer of claim 13 as suggested by Shimoda because such materials are conventionally used in the art of transferring thin film devices from a substrate onto a transfer member, and the employment of known materials for the same purposes would have been within the level of one skilled in the art.

Response to Arguments

5. Applicant's arguments filed 11/22/05 have been fully considered but they are not persuasive.

In the Remarks, applicants argue that Takayama does not teach the claimed feature regarding bonding a support to a layer to be peeled and irradiating a metal layer with a laser after bonding a support to the layer to be peeled. The Examiner respectfully disagrees for the reason set forth in the above rejection in which references to paragraphs that disclose the claimed feature have made it clear.

Conclusion

6. This is a RCE of applicant's earlier Application No. 10/694,803. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Dang whose telephone number is 571-272-1857. The examiner can normally be reached on Mon-Friday 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trung Dang
Primary Examiner
Art Unit 2823

1/09/06